WHAT IS CLAIMED IS:

1. A method of operating a motor vehicle with an electronically controlled automatic clutch device, at least one control device, and at least one data storage device for storing information comprising data values of operating quantities, data values of operating parameters, data values of adaptive parameters, and check values, wherein at least one of said data values is subjected to the steps of:

a) storing the data value as a storage value in the data storage device;

b) storing at least one check value for the data value as a storage value in the data storage device;

wherein the at least one check value serves to verify whether the data value was entered correctly, and wherein a predetermined checking characteristic is used for said verification.

2. The method of claim 1, wherein at least a part of the data values are values of operating parameters used for controlling the motor vehicle.

3. The method of claim 1, wherein step a) comprises reading the data value from the control device.

4. The method of claim 3, wherein step a) comprises storing the data value at least twice so that as a result, the data value is represented in the storage device by a primary storage value and by at least one redundant storage value.

5. The method of claim 4, wherein the primary storage value and the at least one redundant storage value have different data formats.

6. The method of claim 4, wherein at least one of the primary storage value and the at least one redundant storage value has a data format based on binary bits.

7. The method of claim 6, wherein the data format is a 16-bit format.

8. The method of claim 6, wherein the data format is an 8-bit format.

9. The method of claim 4, wherein the storage device comprises addresses and wherein step a) comprises using m bits of an n-bit address for storing at least part of at least one of the primary storage value and the at least one redundant storage value.

10. The method of claim 9, wherein n=16 and m=8.

11. The method of claim 9, wherein step a) comprises storing at least a part of the primary storage value and at least a part of the at least one redundant storage value at the same of said addresses.

12. The method of claim 9, wherein the addresses comprise words of 16 bits, each of said words being subdivided into a first byte of 8 bits and a second byte of 8 bits, and wherein of the primary storage value and the at least one redundant storage value at least a part of one is stored in the first byte and at least part of the other is stored in the second byte.

13. The method of claim 6, wherein said data value has a first format with a length of N bits and storing comprises shifting the data value by a number v of bit positions according to a prescribed shifting characteristic to represent at least part of the data value in a second format shorter than N bits.

14. The method of claim 13, wherein the number v is determined on the basis of at least one of the criteria consisting of the required level of numerical precision at which the data value is to be stored, and the range of possible values

that the data value can take on.

15. The method of claim 13, wherein v=2 and the data value characterizes one of a neutral position of a transmission, a shift-lever position within at least one leg of a shift pattern, at least one rest position of a clutch, and at least one friction coefficient of the clutch.

16. The method of claim 13, wherein v=3 and the data value characterizes a point of engagement of a clutch.

17. The method of claim 4, wherein the storage device comprises addresses arranged in an ordered sequence and the at least one redundant storage value comprises a plurality of storage values stored at consecutive addresses.

18. The method of claim 6, wherein the storage device comprises addresses arranged in an ordered sequence and a predetermined default code is entered into at least one of said addresses prior to storing the data value, said default code serving as an indicator that no data value has yet been correctly entered into the at least one of said addresses, and wherein the predetermined default code has one of the forms "FFFF", "11111111", and "1111111111111111".

19. The method of claim 18, wherein the at least one of said addresses is designated to receive a redundant storage value, the predetermined default code is entered into the at least one of said addresses prior to storing the redundant storage value as an indicator that no redundant storage value has yet been correctly entered into the at least one of said addresses, and the predetermined default code has one of the forms "FFFF" and "1111111111111111".

20. The method of claim 18, wherein further the predetermined default code is overwritten with the data value at a predetermined point in time.

21. The method of claim 18, wherein the data value is stored sequentially, first as the primary storage value and subsequently as the at least one redundant storage value.

22. The method of claim 18, wherein the at least one check value comprises at least one of a test number and a test code, wherein said at least one test number/code is determined according to a predetermined test-number/code characteristic at any time within an interval ranging from before to after step a), and wherein step b) is performed in sequence after step a).

23. The method of claim 22, wherein step b) comprises

storing the at least one test number/code at the same address as the data value.

24. The method of claim 22, wherein step b) comprises storing the at least one test number/code at a different address from the data value.

25. The method of claim 22, wherein the test number/code is correlated with at least one of the data value, the storage address of the data value, and a partial storage address of the data value according to a test number/code correlation characteristic.

26. The method of claim 1, wherein the data storage device is one of a device comprising at least one EEPROM and a device comprised in at least one EEPROM.

27. The method of claim 26, wherein the EEPROM is structured into 16-bit words and is selected from the group consisting of a 64-word EEPROM, a 128-word EEPROM, and a 256-word EEPROM.

28. The method of claim 26, wherein at least a part of the addresses of the EEPROM are assigned to receive data values belonging to adaptive parameters.

29. The method of claim 26, wherein at least part of the addresses of the EEPROM are assigned to serve as error-storage memory.

30. The method of claim 26, wherein at least part of the addresses of the EEPROM are assigned to serve as storage memory for data values that remain substantially constant.

31. The method of claim 28, wherein the vehicle has an ignition switch, the control device performs a shut-down phase after turning off the ignition switch, and wherein data values belonging to the adaptive parameters are stored at least in duplicate during the shut-down phase.

32. The method of claim 31, wherein the information further comprises additional data values that meet at least one of the characteristics of staying constant during operating phases of the vehicle and of serving a purpose other than controlling the vehicle, and step a) comprises storing said additional data values at a time that is substantially independent of turning off the ignition switch.

33. The method of claim 32, wherein the information further comprises at least one substitute value for an adaptive

parameter, said substitute value being predetermined so that the vehicle can be operated with the substitute value instead of the adaptive value, and step a) comprises storing said substitute value at a time that is substantially independent of turning off the ignition switch.

34. The method of claim 32, wherein the information further comprises at least one reference value and step a) comprises storing said reference value at a time that is substantially independent of turning off the ignition switch.

35. The method of claim 32, wherein the information further comprises at least one constraining value for an adaptive parameter, said constraining value representing one of a single allowable value for the adaptive parameter and a range limit for allowable values of the adaptive parameter, and step a) comprises storing said constraining value at a time that is substantially independent of turning off the ignition switch.

36. The method of claim 32, wherein the information further comprises at least one tuning-parameter value, and step a) comprises storing said tuning-parameter value at a time that is substantially independent of turning off the ignition switch.

37. The method of claim 32, wherein the information

further comprises at least one calibration value, and step a) comprises storing said calibration value at a time that is substantially independent of turning off the ignition switch.

38. The method of claim 32, wherein the information further comprises at least one first shifting characteristic for shifting the storage value by at least one bit position at the time of storing, and step a) comprises storing said first shifting characteristic at a time that is substantially independent of turning off the ignition switch.

39. The method of claim 32, wherein the information further comprises at least one first masking characteristic for masking at least one bit position of the data value, and step a) comprises storing said first masking characteristic at a time that is substantially independent of turning off the ignition switch.

40. The method of claim 32, wherein step a) further comprises storing at least a part of the additional values in at least one of an array and a dual array.

41. The method of claim 32, wherein at least a part of the additional values are correlated with at least one adaptive parameter.

42. The method of claim 1, wherein the control device is reset at prescribed points in time.

43. The method of claim 42, wherein the resetting takes place when the control device receives one of an "ignition on" signal and a "wake up" signal.

44. The method of claim 38, further comprising the step of reading back at least part of the storage values for at least one adaptive parameter at predetermined points in time.

45. The method of claim 44, wherein said at least one of the data values is stored in a first data format and is converted to a second data format upon reading back.

46. The method of claim 45, wherein the first data format is a byte format and the second data format is a word format.

47. The method of claim 46, wherein the at least one of the storage values is a redundant value.

48. The method of claim 44, wherein the value being read back is subjected to a shift by at least one bit position

according to a predetermined second shifting characteristic.

49. The method of claim 48, wherein the second shifting characteristic is substantially the reverse of the first shifting characteristic.

50. The method of claim 44, wherein the value being read back is subjected to masking at least part of the read-back value at the time of reading back.

51. The method of claim 44, wherein at the time of storing a redundant storage value at least one bit is dropped from said redundant storage value, and at the time of reading back, said dropped bit is restored to said redundant value based on at least one given value.

52. The method of claim 51, wherein the at least one given value is the primary storage value.

53. The method of claim 44, further comprising at least one of the steps of:

- comparing at least a portion of the primary storage value with at least a portion of at least one redundant storage value; and
- comparing the redundant values to each other.

54. The method of claim 44, wherein the primary storage value is stored in word format and the at least one redundant storage value is stored in byte format, and wherein the method further comprises the step of:

- comparing at least a portion of the primary storage value with at least a portion of the at least one redundant storage value.

55. The method of claim 44, wherein the at least one redundant storage value comprises a plurality of redundant storage values, and wherein the method further comprises the step of:

- comparing at least a portion of one of said plurality to at least a portion of another of said plurality of redundant storage values.

56. The method of claim 44, wherein the at least one redundant storage value comprises at least one of a transformed value and a masked value, and wherein the method further comprises the step of:

- comparing the primary storage value with at least one of the transformed value and the masked value.

57. The method of claim 44, wherein the at least one

redundant storage value comprises at least two redundant storage values from the group of transformed values and masked values, and wherein the method further comprises the step of:

- comparing the at least two redundant storage values to each other.

58. The method of claim 53, further comprising the step of selecting one of the primary storage value and the at least one redundant storage value according to a prescribed selection characteristic, wherein the selected value is used as an at least preliminary working value for at least one working variable.

59. The method of claim 58, wherein the prescribed selection characteristic comprises a comparison between the primary storage value and the at least one redundant storage value.

60. The method of claim 59, wherein said selection characteristic further comprises a selection criterion whereby one of the primary storage value and the at least one redundant storage value is eligible for selection if at least two of the values being compared deviate from each other by less than a prescribed maximum allowable discrepancy.

61. The method of claim 60, wherein the maximum allowable discrepancy is a constant.

62. The method of claim 60, wherein the maximum allowable discrepancy is prescribed as a functional relationship.

63. The method of claim 61, wherein the functional relationship correlates the maximum allowable discrepancy to the absolute magnitude of the values being compared.

64. The method of claim 59, wherein said selection characteristic further comprises a selection criterion whereby one of the primary storage value and the at least one redundant storage value is selected if at least two of the values being compared are substantially identical.

65. The method of claim 59, wherein said selection characteristic further comprises a selection criterion whereby one of the primary storage value and the at least one redundant storage value is selected if it occurs with the highest frequency among the values being compared.

66. The method of claim 59, wherein said at least one redundant storage value comprises two redundant storage values,

and said selection characteristic further comprises a selection criterion whereby, if two values being compared are substantially identical and the third of the values being compared deviates from said two values, one of said two values is selected.

67. The method of claim 59, wherein said at least one redundant storage value comprises two redundant storage values, and said selection characteristic further comprises a selection criterion whereby the primary storage value is selected if the latter is substantially identical to one of the two redundant storage values.

68. The method of claim 59, wherein the primary storage value is selected if at least one other value being compared is an error-code value.

69. The method of claim 68, wherein the error-code value indicates that an electric power supply of the storage device was interrupted at least part of the time while said at least one other value was being stored.

70. The method of claim 59, wherein said selection characteristic further comprises a selection criterion whereby one of the primary storage value and the at least one redundant

storage value is selected if said value lies within a strip of a prescribed band where the greatest number of the values being compared are located; said strip being one of a multitude of strips of equal width that can be laid within the prescribed band so that each strip contains at least one of the values being compared and, besides said at least one, as many other values as possible.

71. The method of claim 59, further comprising the step of selecting a substitute value as an at least preliminary working value for at least one working variable according to a prescribed selection characteristic if, according to a prescribed test characteristic, none of the values being compared are suitable to be used as said at least preliminary working value.

72. The method of claim 71, wherein the prescribed test characteristic dictates that the values being compared are unsuitable if not all of the latter are identical.

73. The method of claim 71, wherein the prescribed test characteristic dictates that the values being compared are unsuitable if the number of non-identical values in the comparison exceeds a predetermined proportion of the total number of values being compared.

74. The method of claim 71, wherein the prescribed test characteristic dictates that the values being compared are unsuitable if all of the values being compared are different from each other.

75. The method of claim 71, wherein the prescribed test characteristic dictates that the values being compared are unsuitable if all of the values being compared are different from each other and none of the values being compared contains an error code.

76. The method of claim 71, wherein the prescribed test characteristic dictates that the values being compared are unsuitable if at least one of the values being compared contains an error code.

77. The method of claim 71, further comprising the step of setting at least one substitute value according to a substitute-value characteristic.

78. The method of claim 77, wherein the substitute-value characteristic comprises a functional dependency of the substitute value on at least one of the values being compared.

79. The method of claim 77, wherein the substitute-value characteristic dictates that one of the values being compared be set as the substitute value if said comparison value lies within a strip of a prescribed band where the greatest number of the values being compared are located; said strip being one of a multitude of strips of equal width that can be laid within the prescribed band so that each strip contains at least one of the values being compared and, besides said at least one, as many other values as possible.

80. The method of claim 71, further comprising the step of setting at least one substitute value by reading the substitute value from a substitute-value storage memory, wherein the at least one stored substitute value was set at an appropriate magnitude to keep the vehicle operable.

81. The method of claim 80, wherein the redundant storage values are referred to by an ordinal number i, and wherein the primary storage value and the redundant value of an order i, are stored outside of the substitute-value storage memory.

82. The method of claim 81, wherein the substitute-value storage memory comprises a substitute-value correlation characteristic defining a correlation between at least one

substitute value and at least one working parameter.

83. The method of claim 71, wherein the prescribed test characteristic dictates that the values being compared are unsuitable if at least one of the latter contains an error code.

84. The method of claim 53, wherein said data values comprise gear-shifting threshold values, and wherein the method further comprises the step of selecting an emergency driving strategy after an error in said gear-shifting threshold values has been detected.

85. The method of claim 84, comprising the step of selecting an implausible substitute value for a gear-shifting threshold value if at least a predetermined number of the storage values being compared for the gear-shifting threshold value are different from each other.

86. The method of claim 84, comprising the step of selecting an implausible substitute value for a gear-shifting threshold value if all of the storage values being compared for the gear-shifting threshold value are different from each other.

87. The method of claim 22, wherein at least one of the storage values in the storage device has at least one test

number/code assigned to it, and wherein the method further comprises the step of checking whether the at least one test code/number confirms said at least one of the storage values.

88. The method of claim 87, wherein at least one of the storage values is the data value of a working parameter.

89. The method of claim 87, wherein at least one of the storage values represents at least one of a primary storage value and a redundant storage value.

90. The method of claim 87, further comprising the step of selecting at least one of the storage values according to a prescribed selection characteristic, wherein the selected value is used as an at least preliminary working value for at least one working variable and the prescribed selection characteristic comprises the condition that the at least one test number/code confirm said at least one of the storage values.

91. The method of claim 87, further comprising the step of selecting a substitute value according to a substitute-value characteristic for the at least one of the storage values if the latter is not confirmed by the test number/code, wherein the substitute value is used as an at least preliminary working value for at least one working variable.

92. The method of claim 87, further comprising the step of selecting a substitute value according to a substitute-value characteristic for the at least one of the storage values, if it cannot be assured with at least a prescribed level of probability that the at least one of the storage values is identical with the data value that was read from the control device into the storage device in step a).

93. The method of claim 58, further comprising the step of transferring the at least preliminary working value to the control device.

94. The method of claim 58, further comprising the step of performing a plausibility check on at least one of the primary storage value, the at least one redundant storage value, the at least one transformed redundant storage value, the at least one masked redundant storage value, a comparison value, the selected value, and a preliminary selected value.

95. The method of claim 94, wherein the plausibility check comprises a determination whether a value being checked lies within a prescribed allowable range of values.

96. The method of claim 95, further comprising the step

of setting an upper range limit and a lower range limit for said allowable range, wherein said upper and lower range limits are matched to the control device in such a manner that adaptations of parameters performed by the control device during operation of the vehicle will not cause the adapted parameters to take on values outside a permissible range.

97. The method of claim 94, further comprising the step of selecting a substitute value according to a substitute-value characteristic for the plausibility-checked value if the latter has been found implausible.

98. The method of claim 94 wherein, if at least one of the plausibility-checked values has been found plausible, said plausible value is selected to be used as an at least preliminary working value and, if at least one of the plausibility-checked values has been found implausible, said implausible value is disregarded.

99. The method of claim 94 wherein, if the plausibility-checked value represents a gear-shifting threshold value and has been found implausible, said implausible value is kept as the gear-shifting threshold value.

100. The method of claim 1, further comprising the step

of setting at least one error code, if at least one predefined error has been detected.

101. The method of claim 1, wherein the predefined error manifests itself through at least one of the error symptoms consisting of:

- a discrepancy between storage values representing one and the same data value;
- the presence of a default code in at least one of the storage values representing said data value;
- a finding that all of the storage values representing said data value are different and that a substitute value was selected for said data value; and
- a finding that none of the storage values representing said data value were found to be plausible in a plausibility check.

102. ~~103.~~ The method of claim 100, further comprising the step of storing at least one of a corrected value and a selected value to represent said data value, if the at least one error code was set for said data value.

103 ~~104.~~ The method claim 100, wherein the storage device comprises an error-storage memory and an error entry is made into said error-storage memory if the at least one error code

was set.

104 ~~105~~. The method of claim 104, wherein the at least one error code that was set indicates a finding that all of the storage values representing said data value are different and that a substitute value was selected for said data value.

105 ~~106~~. The method of claim 104, wherein the at least one error code that was set indicates a finding that none of the storage values representing said data value were found plausible in a plausibility check.

106 ~~107~~. A method of making the operation of a motor vehicle more reliable, comprising:

a) prescribing a targeted displacement-versus-time function for a movement of an actuator of a torque-transmitting device, said targeted displacement-versus-time function being characterized by at least one target value to be met by at least one predetermined parameter of said function on at least one predetermined time;

b) issuing a command signal for the actuator to perform a movement according to the targeted displacement-versus-time function of step a) and thereby causing the actuator to move according to an actual displacement-versus-time function characterized by at least one actual value which the at least

one predetermined parameter assumes at the predetermined time;

c) comparing the at least one actual value to the at least one target value;

d) determining whether the at least one actual value deviates from the at least one target value to an extent that meets a first set of characteristic error criteria;

e) if the result of step d) is affirmative, performing at least one of the steps of transmitting one first error entry to a storage memory for error entries and registering the presence of at least one first malfunction;

f) determining whether the at least one actual value deviates from the at least one target value to an extent that meets a higher-order set of characteristic error criteria, said higher order being characterized by an ordinal number of $j \geq 2$; and

g) if the result of step f) is affirmative, performing at least one of the steps of transmitting at least one ordinal-j error entry to a storage memory for error entries and registering the presence of at least one ordinal-j malfunction.

107 ~~108~~. The method of claim 107, wherein the actuator comprises at least one kinetic device.

108 ~~109~~. The method of claim 107, wherein the actuator

comprises at least one hydraulic device.

109. ~~110~~. The method of claim 107, wherein the actuator comprises:

- at least one master cylinder containing a master-cylinder piston with a master-cylinder piston rod;
- at least one slave cylinder containing a slave-cylinder piston with a slave-cylinder piston rod;
- at least one hydraulic conduit connecting the master cylinder with the slave cylinder;
- at least one motion-transferring device arranged between the slave cylinder piston rod and the torque-transmitting device; and
- at least one actuator-control device for controlling at least one of the master cylinder piston and the master cylinder piston rod.

110. ~~111~~. The method of claim 110, wherein the actuator control device comprises at least one driver device for moving the master cylinder piston.

111 ~~112~~. The method of claim 110, wherein the actuator control device comprises an at least partially hydraulic control device.

112. ~~113~~. The method of claim 112, wherein the at least partially hydraulic control device comprises at least a part of a hydraulic circuit of the motor vehicle.

113. ~~114~~. The method of claim 107, wherein the first set of characteristic error criteria comprises that the targeted displacement-versus-time function deviates from the actual displacement-versus-time function by more than a predetermined maximum allowable displacement deviation.

114. ~~115~~. The method of claim 107, wherein the first set of characteristic error criteria comprises that a target time gradient of the targeted displacement-versus-time function deviates from an actual time gradient of the actual displacement-versus-time function by more than a predetermined maximum allowable displacement-gradient deviation.

115. ~~116~~. The method of claim 107, wherein the first set of characteristic error criteria comprises that the targeted displacement-versus-time function deviates from the actual displacement-versus-time function by more than a predetermined maximum allowable displacement deviation while simultaneously an actual time gradient of the actual displacement-versus-time function does not exceed a predetermined minimum allowable time gradient for the actual displacement-versus-time function.

116 ~~117~~. The method of claim 116, wherein the predetermined minimum allowable time gradient for the actual displacement-versus-time function equals zero.

117 ~~118~~. The method of claim 116, wherein the predetermined minimum allowable time gradient for the actual displacement-versus-time function is more than zero.

118 ~~119~~. The method of claim 116, wherein at least one of the maximum allowable displacement deviation and a maximum allowable displacement-gradient deviation and the minimum allowable time gradient for the actual displacement-versus-time function is a prescribed constant value.

119 ~~120~~. The method of claim 116, wherein at least one of the maximum allowable displacement deviation, a maximum allowable displacement-gradient deviation, and the minimum allowable time gradient for the actual displacement-versus-time function depends on at least one of a targeted displacement, an actual displacement, a targeted displacement gradient, and an actual displacement gradient.

120 ~~121~~. The method of claim 107, further comprising:

- setting at least one of a predetermined targeted displacement

interval and a predetermined targeted end position;

- determining a length of time required for the actuator to complete at least one of traveling the targeted displacement interval and reaching the targeted end position; and
- determining at least one of a presence and nature of a malfunction based on the length of time and based on a correlation characteristic that correlates the malfunction with the length of time.

121 ~~128~~. The method of claim 107, wherein the motor vehicle comprises a position-regulating control loop for the actuator displacement, and the method further comprises:

- setting at least one of a predetermined targeted displacement interval and a predetermined targeted end position as a control target;
- determining a length of time required for regulating the actuator to conform to the control target; and
- determining at least one of a presence and nature of a malfunction based on the length of time and based on a correlation characteristic that correlates the malfunction with the length of time.

122 ~~123~~. The method of claim 107, wherein the targeted displacement-versus-time function is used for operating the vehicle.

123 ~~124~~. The method of claim 107, wherein the targeted displacement-versus-time function is used substantially for diagnosing a condition of the vehicle.

124 ~~125~~. The method of claim 107, wherein the method is performed while the vehicle is operating.

125 ~~126~~. The method of claim 107, wherein the displacement-versus-time function is used for analyzing a dynamic system behavior.

126 ~~127~~. The method of claim 107, wherein said method is performed with a first targeted displacement-versus-time function to obtain first comparison results from step c), wherein further said method is performed a second time with a second targeted displacement-versus-time function to obtain second comparison results from step c), and wherein at least a part of said first and second comparison results are evaluated to generate an overall result for diagnosing a condition of the vehicle.

127 ~~128~~. The method of claim 107, wherein the targeted displacement-versus-time function comprises a substantially slow displacement-versus-time function.

128 ~~129~~. The method of claim 107, wherein the targeted displacement-versus-time function comprises a substantially fast displacement-versus-time function.

129 ~~130~~. The method of claim 127, wherein the first targeted displacement-versus-time function comprises a substantially fast displacement-versus-time function and the second targeted displacement-versus-time function comprises a substantially slow displacement-versus-time function, and wherein further the overall result comprises that an undesirable throttling resistance is present in the hydraulic circuit, if the first comparison result indicates a malfunction and the second comparison result indicates no malfunction.

130 ~~131~~. The method of claim 127, wherein the first targeted displacement-versus-time function comprises a substantially fast displacement-versus-time function and the second targeted displacement-versus-time function comprises a substantially slow displacement-versus-time function, and wherein further the overall result comprises that an undesirable friction effect is present, if the first and second comparison results both indicate a malfunction.

131. ~~132~~. A motor vehicle comprising at least one control

device and at least one data storage device, wherein under first predetermined situations data are transmitted from the control device to the data storage device and under second predetermined situations data are transmitted from the data storage device to the control device, and wherein at least a part of said data are stored in at least duplicate form in the data storage device.